

AMENDMENTS TO THE CLAIMS

Please cancel claim 3 without prejudice or disclaimer of the subject matter set forth therein.

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of claims:

1. (currently amended) A method for determining detecting the non-spermine/spermidine activity of spermine/spermidine N<sup>1</sup>-acetyltransferase (SSAT) activity in a mammal comprising the step steps of:

- a) incubating an amount of a non-spermine/spermidine SSAT substrate in a mammal;
- b) assaying obtaining a tissue or cell or body fluid a sample derived from the mammal; and
- c) detecting for the level of an acetylated form of a the non-spermine/spermidine SSAT substrate in the sample; and
- d) correlating the presence of acetylated substrate to SSAT activity, wherein the presence of the acetylated substrate in the sample is indicative of SSAT activity in the mammal.

2. (currently amended) A method as in claim 1 wherein the SSAT substrate is amantadine and ~~the~~an acetylated form of an SSAT substrate is acetylamantadine.

3. (canceled)

4. (currently amended) A method as in ~~claim 3~~claim 1 wherein the amount of SSAT substrate dosage is equivalent to 1-4 mg/kg.

5. (currently amended) A method as in ~~claim 3~~claim 1 wherein ~~the SSAT substrate is incubated in a mammal and the sample is a~~ blood or urine sample.

6. (currently amended) A method as in claim 5 wherein the urine sample is collected 2-24 hours after SSAT substrate incubation ~~with~~in the mammal.

7. (currently amended) A method as in claim 5 wherein the urine sample is collected 8 hours after SSAT substrate incubation ~~with~~in the mammal.

8. (currently amended) A method as in claim 1 wherein the step of level of an acetylated form of correlating the amount of acetylated non-spermine/spermidine SSAT substrate in the sample is

~~correlated includes correlating to a standard curve to determine the relative level of SSAT activity in the mammal.~~

9. (currently amended) A method as in claim 1 wherein the ~~level of an acetylated form of the non-spermine/spermidine SSAT substrate level is assayed-detected using gas chromatography.~~

10. (currently amended) A method for ~~determining the activity of detecting spermine/spermidine N<sup>1</sup>-acetyltransferase (SSAT) activity~~ in a mammal comprising the ~~step steps of:~~

- a) incubating an amount of a non-diaminopropane SSAT substrate in a mammal;
- b) assaying obtaining a tissue or cell or body fluid sample derived from the mammal;
- c) detecting for the level of an acetylated form of a-the non-diaminopropane substituted SSAT substrate in the sample; and
- d) correlating the detection of acetylated substrate to SSAT activity, wherein the presence of the acetylated substrate in the sample is indicative of SSAT activity in the mammal.

11. (canceled)

12. (new) A method as in claim 8, wherein the acetylated form of the non-spermine/spermidine SSAT substrate is measured by gas chromatography, radiolabel incorporation, mass spectrometry, high-performance liquid chromatography, or thin layer chromatography.

13. (new) A method for assaying non-spermine/spermidine SSAT activity in a mammal comprising the steps of:

- a) contacting a sample obtained from the mammal with a non-spermine/spermidine SSAT substrate;
- b) measuring the amount of acetylated SSAT non-spermine/spermidine SSAT substrate produced; and
- c) relating the amount of acetylated substrate produced to a level of SSAT activity by comparison to a standard curve.

14. (new) The method of claim 13 wherein the sample is a homogenate of a liver tissue and the contacting step is performed at a pH of about 7.8 and the non-spermine/spermidine SSAT substrate is amantadine.

15. (new) The method of claim 13, wherein step a) includes incubating the sample with the substrate for about 10 minutes at 37 degrees C.

16. (new) A method for determining the non-spermine/spermidine activity of spermine/spermidine N<sup>1</sup>-acetyltransferase (SSAT) in a mammal comprising the steps of:

- a) incubating an amount of a non-spermine/spermidine SSAT substrate in a mammal;
- b) obtaining a tissue or cell or body fluid sample from the mammal;
- c) measuring the amount of an acetylated form of the non-spermine/spermidine SSAT substrate in the sample; and
- d) determining the level of SSAT activity in the mammal by comparing the amount of acetylated substrate in the sample to standard curve.